

09/817,880

MS167381.01/MSFTP197US

**REMARKS**

Claims 1-33 are currently pending in the subject application and are presently under consideration. Claims 1, 3, 6, 9-13, 20, 27, 28-30, and 32 have been amended as shown on pp. 1-7 of this Reply. Claims 9 and 11 have been amended herein to correct minor objections noted by the Examiner.

It is respectfully submitted that the original oath or declaration as filed *was not* defective as indicated by the Examiner. Specifically, the filed declaration on page 1 recited the applicant's duty to disclose as "*I acknowledge the duty to disclose information which is material to patentability in accordance with Title 37, Code of Federal regulations §1.56(a).*" Since the applicant properly executed the declaration in accordance with the above language, this affirms that the person making the oath or declaration has acknowledged such duty in view of the language referring to *I acknowledge... on page 1.*

Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

**I. Rejection of Claims 12 and 23-26 Under 35 U.S.C. §112**

Claims 12 and 23-26 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 12 has been amended herein to remove language reciting "if a native executable is unavailable" in order to correlate with the native executable limitation of claim 1. Accordingly, this rejection should be withdrawn. Claim 23 has been amended to recite processing a generic "intermediate language" image, thus as an intermediate language being able to be compiled by standard compilation techniques. It is respectfully submitted that this rejection be withdrawn for claim 23 and claims 24 and 25 which depend there from.

09/817,880

MS167381.01/MSFTP197US

**II. Rejection of Claims 3, 6, 10, 11, 13-15, and 27 Under 35 U.S.C. §112**

Claims 3, 6, 10, 11, 13-15, and 27 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 3, 6, 10, 11, 13-15, and 27 have been amended herein in accordance with the Examiner's suggestions to correct specifying N as being a positive integer with respect to claims 3 and 6, to correlate the term native executable with claim 1 with respect to claim 10, and to correct antecedent basis with respect to claims 11, 13-15, and 27. Accordingly, this rejection should be withdrawn.

**III. Rejection of Claims 20-23 and 27-29 Under 35 U.S.C. §102(e)**

Claims 20-23 and 27-29 stand rejected under 35 U.S.C. §102(e) as being anticipated by Goodwin et al. (U.S. Patent Number 6,158,049). Claims 20 and 28 have been amended herein to recite in part executing a first code image (claim 20) or specialized code image (claim 28) *in an unmodified form* in a runtime environment. Goodwin et al. fails to disclose such feature. Rather, Goodwin et al. discloses a system whereby code is inserted into an original image as "instrumentation" code and the original image plus the instrumentation code is run to determine a profile that can later be used to generate an optimized version of the original code. In sharp contrast, the subject invention as recited in amended claims 20 and 28 are processed in an *unmodified* form and perform no operations on the first code image or the specialized code image such as inserting instrumentation code into these images.

The subject invention as recited in the claims monitors a runtime environment outside these images to determine compatibility with the environment. If the environment is not compatible with the first image or the specialized image, a subsequent image is automatically generated that is compatible with the environment. In this manner, the subject invention as recited in the claims need not perform any special or added operation such as inserting instrumentation code in order to provide optimized images for further processing. In view of the above, it is respectfully submitted that this rejection be withdrawn for independent claims

09/817,880

MS167381.01/MSFTP197US

20 and 28 and claims 22-23, 27, and 29 which depend therefrom.

**IV. Rejection of Claims 1, 2, 5-10, 12-17, 19, 30, and 31 Under 35 U.S.C. §103(a)**

Claims 1, 2, 5-10, 12-17, 19, 30, and 31 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Breslau et al. (U.S. Patent Number 5,761,512) in view of Spyker et al. (U.S. Patent Number 6,571,389). Claims 1 and 30 have been amended herein as follows:

**Claim 1:**

a virtual subsystem that processes a generic code image; [and]

*a loader to determine availability of a specialized image that is associated with an operating environment of the virtual subsystem; and*

a log to store information relating to the [an] operating environment of the virtual subsystem, the logged information is employed as feedback to generate a native executable *based upon the availability of the specialized image*, the native executable is utilized to provide improved performance of the virtual subsystem.

**Claim 30:**

a signal for communicating between one or more components of a virtual system, the virtual system processing a generic code image and logging information relating to an operating environment of the virtual system *via* the signal;

wherein the logged information is employed as feedback across the signal to generate a specialized native executable *if the generic code image is determined incompatible with the operating environment of the virtual system*, the specialized native executable is utilized to provide improved performance of the virtual system.

Neither Breslau et al. nor Spyker et al. alone or in combination teach or suggest *generating* a native executable for an operating system or runtime environment based upon a *compatibility* or *availability* determination with such environments. With respect to Breslau et al., parameters or affinities are compiled for a determined execution

09/817,880

MS167381.01/MSFTP197US

environment. If an environment is not found for a class of parameters, an error message is generated. With respect to the subject invention as recited in the claims, a specialized native image is automatically created if it is determined an existing image is not currently available or compatible with the runtime environment. Thus, if a compatible image is found, the respective image is used with no further compilation, if not found, a new image is generated. In this manner, runtime operations can be optimized by mitigating compilation requirements. Breslau et al. does not teach or suggest creating a new image if an incompatibility is found (See reference numerals 55 and 57 of Fig. 3) nor does Breslau et al. attempt to optimize code performance since each time a runtime environment is determined without error, a compilation is performed which is markedly different from the recited claims (See reference numeral 59 of Fig. 3).

Spyker et al. does not make up for the aforementioned deficiencies with respect Breslau et. al. Spyker et al. neither teaches nor suggests a system that determines if a compatible image exists and generates a specialized image if such image does not exist as recited in the claims. Rather, Spyker et al. merely discloses a virtual subsystem for sharing components among applications which is unrelated to the image generation system as recited in the claims. Accordingly, it is respectfully submitted that this rejection be withdrawn for independent claims 1 and 30 and claims 2, 5-10, 12-17, 19, and 31 which depend therefrom.

**V. Rejection of Claims 3 and 4 Under 35 U.S.C. §103(a)**

Claims 3 and 4 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Breslau et al. (U.S. Patent Number 5,761,512) in view of Spyker et al. (U.S. Patent Number 6,571,389) and further in view of Fogarty et al. (U.S. Patent Number 6,721,946). Fogarty et al. does not make up for the aforementioned deficiencies noted above with respect to Breslau and Spyker regarding amended claim 1. Notably, Fogarty et al. fails to teach or suggest a system that determines if a compatible image exists and then generates a specialized image if such image does not exist as recited in amended claim 1. Therefore, it is respectfully submitted that this rejection be withdrawn.

09/817,880

MS167381.01/MSFTP197US

**VI. Rejection of Claim 11 Under 35 U.S.C. §103(a)**

Claim 11 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Breslau et al. (U.S. Patent Number 5,761,512) in view of Spyker et al. (U.S. Patent Number 6,571,389) and further in view of Cooligan et al. (U.S. Patent Number 6,519,762). Cooligan et al. does not make up for the above noted deficiencies with respect to Breslau and Spyker regarding amended claim 1. Cooligan et al. does not teach or suggest a system that determines if a compatible image exists and then generates a specialized image if such image does not exist as recited in amended claim 1. Rather, Cooligan appears completely unrelated to the subject invention as recited in the claims as Cooligan pertains to hard drive restoration and not virtual execution environments as recited in the claims. Accordingly, this rejection should be withdrawn.

**VII. Rejection of Claim 18 Under 35 U.S.C. §103(a)**

Claim 18 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Breslau et al. (U.S. Patent Number 5,761,512) in view of Spyker et al. (U.S. Patent Number 6,571,389) and further in view of Nelin et al. (U.S. Patent Number 6,253,368). Nelin et al. does not make up for the above noted deficiencies with respect to Breslau and Spyker regarding amended claim 1. Nelin et al. does not teach or suggest a system that determines if a compatible image exists and then generates a specialized image if such image does not exist as recited in amended claim 1. Therefore, it is respectfully submitted that this rejection be withdrawn.

**VIII. Rejection of Claims 24-26 Under 35 U.S.C. §103(a)**

Claims 24-26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Goodwin et al. (U.S. Patent Number 6,158,049) in view of Breslau et al. (U.S. Patent Number 5,761,512). As noted above, claim 20 has been amended herein to recite in part executing a first code image *in an unmodified form* in a runtime environment. Goodwin et al. fails to disclose such feature. Rather, Goodwin et al. discloses a system whereby code is inserted into an original image as "instrumentation" code and the original image plus the

09/817,880

MS167381.01/MSFTP197US

instrumentation code is run to determine a profile that can later be used to generate an optimized version of the original code. In contrast, the subject invention as recited in amended claim 20 is processed in an *unmodified* form and performs no operations on the first code image such as inserting instrumentation code into the image. Breslau et al. does not make up for the deficiencies noted in Goodwin with respect to amended claim 20. Moreover, Breslau et al. does not teach or suggest employing runtime feedback to generate a specialized image in the event a suitable compatible image cannot be found. As such, this rejection should be withdrawn.

**IX. Rejection of Claim 32 Under 35 U.S.C. §103(a)**

Claim 32 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Breslau et al. (U.S. Patent Number 5,761,512) in view of Nelin et al. (U.S. Patent Number 6,253,368). Claim 32 has been amended herein to recite in part a second data field having at least *two* of a developer parameter, a domain flag, a security information field, and a binding information field. Neither Breslau nor Nelin alone or in combination teach or suggest a data field having at least two of the recited fields. Accordingly, this rejection should be withdrawn.

**X. Rejection of Claim 33 Under 35 U.S.C. §103(a)**

Claim 33 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Breslau et al. (U.S. Patent Number 5,761,512) in view of Ramezani (U.S. Patent Number 6,457,122) and further in view of Spyker et al. (U.S. Patent Number 6,571,389). None of these cited references alone or in combination teach or suggest an execution engine that selects at least one specialized executable image from a repository if at least one specialized image matches present operating environment data as recited in claim 33. With respect to Breslau, a compilation is always performed to generate an executable which is unrelated to selecting an image from a repository. Spyker also does not teach or suggest image selection or generation techniques. With respect to Ramezani, this reference teaches installing programs on a writable storage device in a fault tolerant manner which is entirely unrelated to the virtual

09/817,880

MS167381.01/MSFTP197US

execution environment as recited in the claims. Moreover, there does not appear to be *any* motivation found within the cited references themselves to combine the references as required by existing law.

The mere fact that the reference can be modified does not render the modification obvious unless the referenced art also suggests the desirability of the modification. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Furthermore, a teaching or suggestion to make the claimed combination and a reasonable expectation of success must both be found in the prior art, not in applicants' disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Since there is no teaching or suggestion in any of the references suggesting the modification recited by the Examiner, this rejection should be withdrawn.

09/817,880

MS167381.01/MSFTP197US

CONCLUSION

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited. .

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063.

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicant's undersigned representative at the telephone number below.

Respectfully submitted,

AMIN & TUROCY, LLP



Himanshu S. Amin  
Reg. No. 40,894

AMIN & TUROCY, LLP  
24<sup>TH</sup> Floor, National City Center  
1900 E. 9<sup>TH</sup> Street  
Cleveland, Ohio 44114  
Telephone (216) 696-8730  
Facsimile (216) 696-8731